MERCED COUNTY

DEPARTMENT OF PUBLIC HEALTH
Division of Environmental Health

John Volanti, M.P.H.
Director of Public Health

Health Administration
260 E. 15th Street
Merced, CA 95340
(209) 381-1200
(209) 381-1215 Fax

Jeff Palsgaard, M.S.
Director of Environmental Health

Environmental Health
777 W. 22nd Street
Merced, CA 95340
(209) 381-1100
(209) 384-1593 Fax
www.co.merced.ca.us

Equal Opportunity Employer

November 4, 2004

Polly Lowry
Regional Water Quality Control Board, Central Valley Region
11020 Sun Center Drive #200
Rancho Cordova, CA 95670

Re: Comments concerning the Draft National Pollutant Discharge Elimination System (NPDES) General Permit and Waste Discharge Requirements (WDR's) General Order for milk cow dairies

Dear Ms. Lowry:

The Division of Environmental Health has reviewed the documents listed above and has the following comments (underlined portions are additions and strikeouts are recommended deletions to the draft requirements):

General Comments

1) The document almost exclusively depends on groundwater monitoring as the primary determination that the Nutrient Management Plan (NMP) and Waste Management Plan (WMP) are protective of groundwater quality. Utilization of groundwater monitoring as the primary means of determining impacts to groundwater is less effective than monitoring the proper timing and application rates of manure and wastewater. We believe that monitoring of proper application rates through measuring and recording the timing, concentration and applied quantities of wastewater and manure, plant tissue analysis and soil nutrient monitoring are the most appropriate means to protect groundwater quality. Regulatory and operator emphasis should be directed to the proper application of wastewater and manure. As an alternative to mandatory groundwater monitoring, we recommend increased monitoring of soil (prior to the planting of each crop) and adding plant tissue analysis (after each crop).

2) We suggest that the submittal of the Notice of Intent (NOI), Report of Waste Discharge (ROWD), WMP, NMP, Manure Tracking Manifest, Annual Reporting and lab analysis be required to be submitted electronically or manually in a standardized format. The volume of paperwork that the Regional Board would receive will be overwhelming and analysis of the submitted information will be virtually impossible utilizing a paper reporting system. Therefore, we strongly suggest an electronic data system be utilized as much as possible. Electronic transmission will make it easier to

A71

analyze information for compliance and easier for the producer to submit. In addition, we recommend that the reporting and monitoring be reduced as much as possible to those items that relate to groundwater and surface water quality issues, as mentioned throughout our comments. Information should only be required in order to determine appropriate application rates and for analyzing potential impacts to groundwater and surface water quality.

3) Merced County has a $252,000 grant from the State Water Resources Control Board to develop a model format for a Nutrient Management Plan (NPM) and Waste Management Plan (WMP). The model plan will be prepared to consolidate the requirements of the Notice of Intent, ROWD, WMP, NMP, Manure Tracking Manifest, Annual Reporting and lab analysis into a comprehensive user-friendly web-based electronic document that will also include the air district requirements. In addition, we have prepared a complete inspection checklist and operator guidance document.

4) Given the significant change in the requirements for dairies, what is the specific regulatory plan by Region 5 to implement these requirements?

5) The current State fee schedule for CAFO's recognizes a local regulatory program. However, this document does not reflect how a local county regulatory program will be coordinated with the Regional Board regulatory program. Coordination with the Dairy Quality Assurance Program and the Natural Resources Conservation Service, Natural Resources Conservation District (NRCS) are also not discussed. We have previously submitted to the RWQCB a local regulatory program plan for your review and comment and understand that our program plan will be considered after adoption of the milk cow dairy general permit and order.

6) We recommend that an economic impact analysis be included to identify the financial impacts of the new requirements.

7) We believe that without a specific regulatory plan for implementing these draft requirements and significant changes to the draft requirements, this program will be a paperwork nightmare, a complicated program for the operators to understand and a very difficult program to enforce.

Specific Technical Comments

Standard Provisions and Reporting Requirements

1) **B. Standard Provisions Page 3 #16** The discharger shall permit representatives of the Regional Board, an approved County program and the State Water Resources Control Board (State Board), upon presentations of credentials at reasonable hours to:
   a. Enter premises where wastes are treated, stored, or disposed and where any records required by the Order are kept provided appropriate biosecurity measures

A72

are followed, as established by the California Department of Food and Agriculture;

b. Copy any records required to be kept under terms and conditions of the Order;
c. Inspect facilities, equipment (monitoring and control), practices, or operations regulated or required by the Order; and
d. Sample, photograph, and /or video tape any discharge, waste, waste management unit, or monitoring device.

2) **B. Standard Provisions Page 3 #17 The** Discharger shall properly operate and maintain in good working order any facility, unit, system, or monitoring device installed to achieve compliance with the Order. Proper operation and maintenance includes best practicable treatment and controls (BPTC) and the appropriate quality assurance procedures.

Comment: Where is the list of BPTC and who establishes and updates the list? We would suggest that the Regional Board maintain a list of BPTC in the same manner as the San Joaquin Valley Air District. We would further recommend that the Regional Board develop an advisory committee consisting of regulators, industry and educational representatives to jointly develop and maintain the list of BPTC.

3) **C. General Reporting Requirements Page 6 #6**

Except for data determined to be exempt from disclosure under the Public Records Act (California Government Code Sections 6275 to 6276), and data determined to be confidential under Section 13267 (b)(2) of the California Water Code, all reports prepared in accordance with the Order and submitted to the Executive Officer or approved County program shall be available for public inspection at the offices of the Regional Board. Data on waste discharges, water quality, meteorology, geology and hydrology shall not be considered confidential.

4) **C. General Reporting Requirements Page 9 #7**

The Discharger shall file a Report of Waste Discharge with the Regional Board at least ~~180~~ 90 days before making any material change in the character, location, or volume of ~~the discharge~~ manure or process wastewater. A material change includes, but is not limited to the following:

a. The addition of a new wastewater that results in a change in the character of the waste;
b. Significantly changing the ~~disposal~~ manure or process wastewater application method ~~or locations;~~
c. Any change in application location;
d. Significantly changing the method of treatment; and or
e. Increasing the ~~discharge~~ volume or mass of manure or process wastewater beyond that specified in the Order.

A 73

Comment: 90 days would seem to be adequate time to report changes to the ROWD. We recommend the term discharge be replaced with process wastewater/manure.

General Order

1) **A. PROHIBITIONS Page 5 #8**

The application of process wastewater to a land application area during and up to 24 hours after a significant storm event is prohibited.

Comment: Defining a storm event would be extremely difficult. Because there is already a definition of significant storm event in the Monitoring and Reporting Program, we recommend that that this section be revised to add significant to the type of storm event. In many locations irrigation water is not available to dilute applied lagoon water for fall or winter crops. It is beneficial to have dilution of this lagoon water to improve distribution uniformity and dilution of salts and nutrients. At some locations it may be desirable to coordinate retention pond water applications with moderate magnitude storm events that do not increase the moisture content of the soil such that it exceeds field capacity.

2) **B GENERAL SPECIFICATIONS Page 6 #5**

5. At a minimum, retention ponds must comply with the minimum standards contained in Title 27 CCR Section 22562(d) (i.e. shall be lined with, or underlain by, soils which contains at least ten (10) percent clay and not more than ten (10) percent gravel or artificial materials or materials with equivalent impermeability and must include additional lining materials necessary to comply with General Specifications B.1 and the groundwater limitations in this Order.

Comment: We suggest a permeability value of 10^{-6}cm/s or slower for the lining of a pond. Merced County adopted this standard two years ago. The Natural Resources Conservation Service (NRCS) Part 651 Agricultural Waste Management Field Handbook 651-1080 Appendix-10D has a permeability value of 10^{-6}cm/s. A landfill has a permeability value that must be met of 10^{-6}cm/s (California Code of Regulations Title 27 Section 20330).

3) **B GENERAL SPECIFICATIONS Page 6 #7**

7. Retention ponds shall be managed to prevent breeding of mosquitoes and other vectors. In particular:
   a. An erosion control program shall ensure that small coves and irregularities are not created around the perimeter of the water surface;
   b. Weeds shall be minimized through control of water depth, harvesting, or herbicides;
   c. Manure solids, dead algae, vegetation, and debris shall not accumulate on the water surface.

A74

Comment: Is a written erosion control program necessary? This section should be clarified, indicating that these requirements do not apply to settling basins. Settling basins used at dairies collect substantial quantities of floating material during normal operation. Implementation of 7.c. would require these settling basins to be removed from service with negative impacts to storage lagoons, distribution piping systems, and controlled applications of nutrients.

4) **B GENERAL SPECIFICATIONS Page 7 #16**

Unlined ditches, swales and/or earthen-berm channels may only be used for temporary control of accidental spills, or rainfall-induced overflows at CAFOs designed, constructed, operated and maintained in compliance with Prohibition A.2

Comment: We recommend that this section be deleted. What is basis for this requirement? What study has been conducted to indicate that this has been a problem? The risk to groundwater from lagoon water in unlined ditches that has been diluted with 5 or more parts of irrigation water and maintained in an unlined irrigation ditch for less than 24 hours/week is probably low. If the purpose of this section is to eliminate the use of unlined ditches as retention ponds, then the section should be rewritten to specify that unlined ditches, swales and/or earthen channels shall not be used for storage of process wastewater.

5) **B GENERAL SPECIFICATIONS Page 7 #17**

Salt in animal rations shall be limited to the amount required to maintain animal health and optimum production.

Comment: Salt in animal rations, soil, plant tissue, water, manure and wastewater needs to be defined. What types of salts are being referenced? A specific definition of salt has been an issue for a number of years.

6) **D LAND APPLICATION SPECIFICATIONS Page 8 #5**

All applied wastewater must infiltrate completely within 24 consecutive hours after application.

Comment: In some areas with loamy or clay soil complete infiltration of applied wastewater may not occur within 24 hours. We recommend a period of 72 hours. This would prevent breeding of mosquitoes.

7) **F PROVISIONS Page 9 #4**

The Discharger shall submit a complete Report of Waste Discharge in accordance with the California Water Code Section 13260 at least ~~180~~ 90 days prior to any material change.....

A75

Comment: One hundred and eighty (180 days) is an excessive number of days for notification of changes to a Report of Waste Discharge. We recommend a 90-day notification.

8) **F PROVISIONS Page 9 #6**

Waste shall not be placed into the pond until the Executive Officer or designee notifies the Discharger in writing that the report is acceptable. The Executive Officer or designee shall approve or disapprove the report within 30 days of receipt.

Comment: We recommend that " or designee" be added after Executive Officer. We also recommend that the Executive Officer shall approve or disapprove the report within 30 days.

9) **F PROVISIONS Page 9 #8**

Prior to transferring manure or process wastewater to other persons, a Discharger must provide the recipient with the most current nutrient analysis of the material to be conveyed. Manure amounts of less than 1 ton or process wastewater less than 1,000 gallons conveyed offsite are exempt from this requirement.

Comment: We would recommend that manure and process wastewater in amounts less than 1 ton or 1,000 gallons respectively, be exempt.

10) **F PROVISIONS Page 10 #18**

The Discharger shall maintain a copy of this Order at the site so as to be available at all times to site-operating personnel. The Discharger, landowner and his/her designee shall ~~ensure that all site-operating personnel~~ be ~~are~~ familiar with the content of this Order.

Comment: We recommend that the second sentence of this section be revised. We do not see any reason for all site-operating personnel (e.g. milkers) to be familiar with the content of the Order.

11) **I REQUIRED REPORTS AND NOTICES Page 12 #3a**

Groundwater monitoring, will be used to determine the effectiveness of the waste management practices to protect groundwater quality.

Comment: We recommend that soil, manure/wastewater application rates and timing and plant tissue nutrient uptake monitoring be added to determine the effectiveness of the waste management practices to protect groundwater quality. Groundwater quality assessment is one of many physical parameters that can be evaluated to determine the effectiveness of waste management practices to protect groundwater

A76

quality. As an alternative to mandatory groundwater monitoring, we recommend increased monitoring of soil (prior to the planting of each crop) and adding plant tissue analysis (after each crop) to evaluate nutrient uptake and balance.

12) **I REQUIRED REPORTS AND NOTICES Page 13 #3b**

Groundwater monitoring will be used to determine the effectiveness of the waste management practices to protect groundwater quality.

Comment: We recommend that soil, manure/wastewater application rates and timing and plant tissue nutrient balance monitoring be added to determine the effectiveness of the waste management practices to protect groundwater quality. Groundwater quality assessment is one of many physical parameters that can be evaluated to determine the effectiveness of waste management practices to protect groundwater quality and should not be the sole basis in determining the effectiveness of the NMP. As an alternative to mandatory groundwater monitoring, we recommend increased monitoring of soil (prior to the planting of each crop) and adding plant tissue analysis (after each crop) to evaluate nutrient uptake and balance.

13) **I REQUIRED REPORTS AND NOTICES Page 13 #4**

The Discharger shall submit a technical report within 30 days of becoming aware of storm water monitoring showing that storm water discharges from the production area contains elevated concentrations of CAFO waste constituents. The technical report shall evaluate the facility to determine pollution source identification for storm water pollution control.

Comment: What is considered "elevated concentrations". An elevated concentration needs to be defined. Will this "elevated concentration" be the same at all dairies?

14) **K SCHEDULE OF TASKS**

The schedule requires that the Waste Management Plan (WPM) be submitted 6 months before the Nutrient Management Plan (NMP).

Comment: We believe that the WMP and NMP are so reliant upon one another and so interrelated that they should be completed at the same time. Essentially these two documents are the Federal Comprehensive Nutrient Management Plan (CNMP).

Attachment A- Notice of Intent

1. The Notice of Intent requests information concerning the use of all chemicals at the facility. The Annual Report requests the amount of each type of chemical used in the production area.

A77

Comment: We recommend that the Notice of Intent and the Annual Report requirements for chemical disclosure be eliminated because the chemical disclosure information is already required in the WMP.

Attachment C-Waste Management Plan

1. The Waste Management Plan (WMP) is required to be signed by a civil engineer.

   Comment: Many portions of the WMP do not require a civil engineer signature (e.g. description of facility, dead animal disposal, salt in animal diet issues, etc.). We recommend that a civil engineer signature only be required for those portions of the plan currently required by the California Business and Professions Code.

2. Page 2 Item 2

   This section requires engineering design calculations showing if the existing containment structures are able to contain all manure and process wastewater including the runoff and direct precipitation from a 25-year, 24 hour rainfall event. There is a list of factors to determine the necessary storage volume.

   Comment: None of the factors listed to determine the necessary storage volume discuss the need to apply the wastewater or manure at agronomic rates. The storage calculations must include information indicating that the storage volume includes adequate storage for the proper timing and rate of manure and/or process wastewater application.

3. Page 2 Item 2: Line 5 states

   ...reflect the maximum length of time anticipated between ~~retention pond emptying~~ land application events.

   Comment: The revised language is suggested to reflect that ponds should not be emptied without regard to the proper agronomic application rates.

4. Page 1 Item 1

   The description section should include a "Facility Name" and "County".

5. Page 5 New Item #9

   Any significant change in the WMP should result in a revision and be resubmitted to the RWQCB and/or local agency.

A78

Attachment D- Nutrient Management Plan

1. In the opening paragraph, the following statement is made: "Groundwater monitoring will be used to determine if implementation of the NMP is protective of groundwater quality.

   Comment: We recommend that soil, manure/wastewater application rates and timing and plant tissue nutrient balance monitoring be added to determine the effectiveness of the waste management practices to protect groundwater quality. Groundwater quality assessment is one of many physical parameters that can be evaluated to determine the effectiveness of waste management practices to protect groundwater quality. In some cases regional or sub-regional negative impacts to groundwater quality may exist today over a wide area. These impacts may be due to a combination of farming practices associated with dairy production and other non-dairy related farming practices. Understanding the inter-relation of this situation may require significant groundwater investigation and hydro-geologic analysis. As an alternative to mandatory groundwater monitoring, we recommend increased monitoring of soil (prior to the planting of each crop) and adding plant tissue analysis (after each crop) to evaluate nutrient uptake and balance.

2. Add a new Item 8

   Any significant change in the NMP should result in a revision and be resubmitted to the RWQCB and/or local agency.

Attachment F- Definitions

1. The following terms need to be added to the list of definitions: agronomic, background water quality, best management practices (including where they can be found and who updates the list), best practicable treatment or control (including where they can be found and who updates the list), destination (as it relates to the Manure Tracking Manifest), nutrient balance, salt, significant storm event.

2. Page 1 "Discharger" is defined as the owner and operator of an existing milk cow dairy subject to the federal CAFO regulations.

   Comment: What if the dairy is leased? If the dairy is leased and the owner is not the operator, who is considered the "Discharger?' In other cases, the dairy operator may own and operate the dairy and some of the cropped acreage, but also discharge to other acreage that he does not own. A clear definition of responsibility must be made for the many ownership and operation relationships used in the field.

Monitoring and Reporting Program

1. *Comment: We suggest, "significant storm event" be added to the list of definitions.*

A79

2. A. MONITORING PROVISIONS- Inspections Page 1 Item 3

This section states that freeboard shall be measured to the nearest 0.1 foot.

Comment: We recommend that it should be measured to the nearest 0.25 foot. It is unrealistic to request this level (0.1 foot) be accurately measured.

3. Manure and Process Wastewater Monitoring Page 1 Item 4

This section states that: Manure must be analyzed at least ~~once~~ twice (Spring and Fall) annually for nitrogen, ~~and~~ phosphorus, potassium and salt content. The sample must be a composite sample collected as recommended by the Natural Resources Conservation Service (NRCS). In addition, we recommend that Organic Nitrogen (Org-N) be added to the list of constituents sampled, analyzed and reported.

Comment: We recommend that moisture content, potassium and salt be added for analysis. We also recommend that the units for measuring wastewater flow be changed from acre-feet/day to gallons/event. This would be consistent with current flow meter output capabilities and also be consistent with the required application monitoring of wastewater. These recommendations are based on the Natural Resources Conservation Service Comprehensive Nutrient Management Plan Technical Guidance Document.

We also recommend that specific protocols be added or referenced for collecting manure and wastewater samples. For example, composite sampling for manure.

4. Storm Water Monitoring- Page 4

This section requires that any discharge of storm water from the production area to surface water be collected and analyzed.

Comment: It is our understanding that if there is no discharge of storm water from the production area to surface water, no collection and analysis is required. However if there is a discharge and collections and analysis are conducted pursuant to this section, what happens after 2 years?

5. Groundwater Monitoring- Page 5 Item 9

This section states that: "A sufficient number of water supply wells shall also be included in the monitoring program to characterize the quality of water being used at the site"

Comment: We suggest that this section be revised to the following: "A sufficient number of on-site water supply wells shall also be included in the monitoring program to characterize the quality of water being used at the site". Adding on-site wells will clarify that adjacent off-site wells do not have to be analyzed.

A80

Comment: We also suggest that if groundwater monitoring is required that the following language be added: Following completion of monitor well installation the Discharger will provide for the services of a registered land surveyor or other qualified professional to measure the horizontal position of all monitoring wells with 1 foot lateral accuracy using the NAD83 datum. Vertical elevations of these monitoring wells will also be provided by the Discharger referenced to the NAVD88 datum to an absolute accuracy of at least 0.5 feet and a relative accuracy between monitoring wells of 0.01 feet. This information concerning horizontal, vertical and elevations data are necessary to report to the RWQCB/local agencies to analyze the potential regional and sub-regional impacts to groundwater.

In addition, we believe that regional and/or sub-regional groundwater monitoring may be an option to individual groundwater monitoring of dairies. A number of dairies within a specific area may be able to form a coalition to monitor groundwater. Existing irrigation district wells may be utilized. As the condition of the groundwater becomes known, more precise groundwater monitoring may be required.

6. Operation and Maintenance Page 7 Item 14

Comment: We recommend exception reporting be allowed.

7. General Monitoring Requirements Page 8 Item 17

This section states that all analyses shall be conducted at a laboratory certified for such analyses by the California Department of Health Services.

Comment: Does the California Department of Health Services certify soil, plant tissue, manure and wastewater laboratories? Is it appropriate for the Department of Health Services to certify soil, plant tissue, manure and process wastewater analysis? We recommend that if the State Department of Health Services does not certify soil, plant tissue, manure and process wastewater laboratories, that specific methods of analysis be required (e.g. EPA test methods or other recognized methods by laboratories currently conducting analysis). Perhaps forming an ad hoc workgroup of laboratories currently conducting this type of analysis would be beneficial.

8. Annual Reporting Page 10 Item 3

This section states: By 1 February of each year, an annual monitoring report for the previous year shall be submitted to the Executive Officer. The annual report shall include the full crop cycle of planting and harvesting as indicated in the NMP for the previous year. The ending of the crop cycle shall coincide with the harvest of the summer crop.

Comment: We believe that basing the reporting year on a calendar year, without consideration of cropping patterns will make it difficult to determine if the proper application rates are being applied.

A81

9. Annual Reporting Page 10 Item f

Item f states: "Total number of acres and the Assessor Parcel Numbers under control of the CAFO that were used for land application of manure and process wastewater in the previous 12 months."

Comment: We recommend the revised wording: "Total number of acres and the Assessor Parcel Numbers of property ~~under control of the CAFO~~ that were used for land application of manure and process wastewater in the previous 12 months."

10. Soil Monitoring Page 2 Item 5

Comment: We recommend that specific protocols be added or referenced for taking soil samples. For example, how to collect composite soil samples, depth of sample, etc.

11. Add Plant Tissue Monitoring Page 8

Comment: We recommend the following language be added: The Discharger shall monitor all crop tissue produced with manure, litter, process wastewater, or nutrient laden stormwater to establish crop uptake and nutrient balances. A record of total crops harvested by variety and season each year shall be maintained for 5 years. Sufficient representative composite samples shall be collected and analyzed at least once for each crop harvested per field. Plant tissue (ie~corn silage, oats, sudan forages) shall be analyzed for wet yield of crop (tons/acre), moisture content (%), protein content (%), phosphorus content (%), and potassium content (%).

Fact Sheet Water Quality Objectives Page 8

Comment: We recommend the following language be added: Organic forms of nitrogen (complex forms of nitrogen other than ammonia and nitrate) in manure and process wastewater at milk cow dairies are an important component to consider in planning agronomic application rates, timing and crop nutrient balance (nutrient uptake). Following application to crops the mineralization of Org-N to plant available forms such as ammonia and ultimately nitrate can affect groundwater quality. (Chapter 6 of UC Committee of Consultants draft report Sept 2003 through July 2004 revise).

A82

Thank you for the opportunity to comment. If you have any questions, please contact me at jpalsgaard@co.merced.ca.us or (209) 381-1087.

Sincerely,

Jeff Palsgaard, Director
Division of Environmental Health

cc: Deidre Kelsey, Merced County Chairman Board of Supervisors
Jerry O'Banion, Merced County Supervisor District 5
John Volanti, Merced County Director of Public Health
Regional Water Quality Control Board Members
Thomas Pinkos, Executive Officer RWQCB
Ken Landau, Assistant Executive Officer RWQCB
Dennis Westcot, RWQCB
Lonnie Wass, RWQCB
Rudy Schnagl, RWQCB
Merced County Dairy Technical Advisory Committee
John Menke, State Water Resources Control Board
Paul Martin, Western United Dairymen
John Ungvarsky, US EPA
Lynn Kuo, US EPA
Deanne Meyer, UC Davis
Bob Fry, USDA NRCS
Dan Johnson, USDA NRCS
Kevin Abernathy, California Dairy Campaign
J.P. Cativiela, CARES
Allen Dusault, Sustainable Conservation

generalordercomments

A83